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Journal of the Society of Arts.

FRIDAY, SEPTEMBER 27, 1861.

◆

INTERNATIONAL EXHIBITION OF 1862.

The Council beg to announce that the Guarantee Deed is now lying at the Society's House for signature, and they will be much obliged if those gentlemen who have given in their names as Guarantors, will make it convenient to call there and attach their signatures to the Document. Signatures for sums amounting in the aggregate to £430,500, have been attached to the Deed.

Guarantors who have not received Ivory Passes to the Exhibition Buildings are requested by the Contractors to apply for them to the Secretary of the Society of Arts, John-street, Adelphi, London, W.C.

Her Majesty's Commissioners have issued the following decisions:—

Medals.

"Prizes or rewards of merit, in the form of medals, will be given in Sections I., II., III."

(*a.*) These medals will be of one class, for merit, without any distinction of degree.

(*b.*) No exhibitor will receive more than one medal in any class or sub-class.

(*c.*) An International Jury will be formed for each class, and sub-class, of the Exhibition, by whom the medals will be adjudged.

(*d.*) Each Foreign Commission will be at liberty to nominate one member of the jury for each class, and sub-class, in which staple industries of their country, and its dependencies, are represented.

(*e.*) The names of the Foreign jurors must be sent to Her Majesty's Commissioners before the 28th of February, 1862.

(*f.*) The British jurors will be chosen in the following manner:—

Every exhibitor will name three persons to act on the jury for each class, or sub-class, in which he exhibits, and, from the persons so named, Her Majesty's Commissioners will select three members of the jury for each such class or sub-class.

(*g.*) Her Majesty's Commissioners reserve to themselves the power of modifying these arrangements, in any particular case where it may appear to them that the strict application of the principles of these decisions would be attended with injustice.

(*h.*) The names of the jurors will be published in March, 1862.

(*i.*) The juries will be required to submit their awards, with a brief statement of the grounds of each, to Her Majesty's Commissioners, before the last day of May, 1862.

(*j.*) Should the reasons assigned for any award appear insufficient, or should no reason be given, Her Majesty's Commissioners reserve to themselves the right of confirming or rejecting it.

(*k.*) The awards will be published in the Exhibition Building, at a public ceremony, early in the month of June, 1862.

(*l.*) They will immediately afterwards be conspicuously attached to the counters of the successful exhibitors, and the grounds of each award will be very briefly stated.

(*m.*) If an exhibitor accepts the office of juror, no medal can be awarded in the class, or sub-class, to which he is appointed, either to himself individually or to the firm in which he may be a partner.

(*n.*) The medals will be delivered to the exhibitors on the last day of the Exhibition.

Processes of Manufacture.

Besides making arrangements for showing machinery in motion, and illustrating it by processes, her Majesty's Commissioners will reserve space for the exhibition of processes of manufacture, in certain handicrafts which can be carried on without danger in the building. They consider that it will be interesting to the general public to have an opportunity of seeing the following and similar processes, and will reserve sufficient space for showing one illustration of each of them:—

Steel pen making.
Pin making.
Needle making.
Button making.
Medal striking.
Gold chain making.
Engine turning for watches, &c.
Type casting.
Type printing by hand.
Lithographic printing.
Copperplate printing.
Earthenware printing.
Porcelain printing.
A potter's wheel.
Brick and drain tile making.
Glass blowing on a small scale.
Turning in metal, wood, and ivory.
Glove making, &c.
Pillow lace making of various kinds.

Applications to exhibit these processes, with full particulars of the space required, and of any special preparations which may be necessary, should be addressed before the 1st of November, 1861, to F. R. Sandford, Esq., 454, West Strand, London, W.C.

THE BRITISH COLONIES AND THE INTERNATIONAL EXHIBITION.

By P. L. Simmonds.

No. IV.—The Australian Colonies.

The British nation seldom takes stock of its colonial possessions, and the condition of these, as regards their progress, is usually roughly estimated by current facts and figures, rather than by any careful comparison of the present and past. The material wealth of the world, and the advancing influences of commerce and civilisation, move on so rapidly, that a backward glance of some years into the past, creates surprise even in the most unreflecting mind. We have just been taking a census of the population of the United Kingdom, and the present offers a not inappropriate time for looking into the condition of the great Australian Colonies. The more especially does this seem a fitting inquiry, as ten years have elapsed since the Great Exhibition of 1851—and they are all making active and earnest preparations to be duly represented at the International Exhibition which is to be held in London next year. How interesting, then, will be the retrospect; as well as the comparison of the now and then. What amazing strides have those colonies, individually and collectively, made—an advance in every element of prosperity certainly unequalled in any other quarter.

In another column I have collected and arranged with considerable research a series of statistical returns, which will serve to show by comparison the astonishing advance of Australia, and these figures deserve a careful study. Columns of figures, it is true, at the best of times are not very attractive, but the comparative results shown are such as will fully repay even a cursory glance over the tables. I will, however, summarise some of the principal facts which these statistics elicit. I have endeavoured to limit the comparison to the past ten years, but it has not been possible in all cases to obtain the official returns for the last year or two. The statistics given are, however, ample for the comparisons required.

Firstly, we find that the population of these colonies has more than doubled in the ten years, the chief addition being made by more than half a million of emigrants from the United Kingdom. The progressive increase of population has been great in all the colonies, but Victoria, from the influence of its gold-fields, shows the largest increase, having advanced from 77,345 souls in 1850, to 530,262 in 1859. Some important territorial changes have taken place in Australia since 1851, which require preliminary notice. The settlement of Port Phillip, which had, in 1851, only been just erected into a separate colony, has now become the principal colony of the group. The northern portion of New South Wales, formerly known as Moreton Bay, has, within the last two years, been separated, and made an independent colony, under the name of Queensland; and by the energy of its governor and leading men is making great strides in progress, and attracting a large share of notice at home. Norfolk Island, formerly a convict settlement and dependency of New South Wales, has been colonised by the Pitcairn Islanders, about 200 in number, to whom a romantic interest attaches, as the descendants of the mutineers of the *Bounty*, and who had kept up their primitive simplicity and isolation, until they had outgrown the limits of their former island home. Van Diemen's Land, having ceased to be a convict colony, has changed its name to Tasmania—certainly a more euphonious title. In New Zealand, Canterbury, and some other new settlements have been founded, and several new provinces created.

The land under cultivation in Australia has more than doubled in the ten years, and it is satisfactory to find that the greatest progress in this respect has been made in Victoria, notwithstanding the general attractions of its gold-fields. This colony bids fair, before long, to be self-supporting, in an agricultural point of view, as regards grain, forage, and root-crops, for which it has drawn largely hitherto upon the surrounding colonies. The live stock in the colonies have also about doubled, with the exception of sheep, which have increased more slowly. There are two causes for this—the larger demand for slaughter, owing to the increased population, and the deficiency of shepherds and pastoral labour generally. The clip of wool has by no means declined; on the contrary, there is an advance of nearly 50 per cent. in the shipments in the last ten years, of which more than one-third is exported by Victoria.

Another most important Australian product is its gold; and this, though chiefly concentrated in Victoria, is also obtained in smaller quantities in four of the other colonies. It is computed, on good authority, that within the last ten years more than £111,000,000 sterling of gold has been obtained in Australia. It cannot be denied that to these gold discoveries Australia owes much of her existing prosperity and population. To enumerate all the benefits that have resulted from this flow of wealth and tide of population would be impossible; although it cannot be denied that much individual misery and disappointment have been mixed up with this general advance. But to the industrious and willing hand there is no room for permanent failure—success is certain.

The permanent improvements in Australia are very striking. Railways, and telegraphs, and improved roads have been widely extended. Steam navigation has been carried into the far interior by the Murray and Darling, and their tributaries. Magnificent buildings have been erected in town and country; towns and villages have sprung up over the length and breadth of the land; pastoral operations have been extended, and the several colonies brought into closer and more frequent communication.

Ship-building and the progress of the Colonial Marine is another important feature of consideration. In 1850, the vessels belonging to Australia and New Zealand numbered 779, of 56,836 tons. In the close of 1859, the number of colonial registered vessels had increased to 1,379, of 147,151 tons, of which 106, registering 12,734 tons, were steamers. Besides these, there are the several vessels belonging to the Intercolonial Steam Navigation Company, and other British registered steamers, navigating the Australian seas. The greater part of the colonial craft employed have been built in the colonies, and some very fine vessels, sail and steam, have been turned out in Sydney, Melbourne, Hobart Town, and New Zealand.

The aggregate revenue of the Australian Colonies has risen from £1,250,000 to £6,000,000 per annum; their external trade (imports and exports), from £8,250,000 to £47,000,000 sterling! If we could estimate the value of the fixed property and improvements generally, and the enhanced value of land, we should also find much to surprise us in the immense advance which Australia has made, in these respects, in so brief a period.

As regards the general current of trade, this progress has been equally beneficial, since most of its business relations are carried on with the United Kingdom.

In 1850, the value of the British produce and manufactures exported to our settlements in Australia was but £2,602,253; in 1859, it had reached £11,229,448. The average annual value of the British exports to that quarter, in the first five years of the decade, was £7,950,716; in the last five years, it averaged £10,589,015, or at the rate of nearly £10 per head of the population. The net value of the imports of merchandise from Australia, in the past five years, has averaged £5,851,503, exclusive of the gold.

Glancing at the special shipping trade between the mother country and the Australian colonies, we find this has steadily advanced, although not maintained at the enormous stimulus which it received just after the gold discoveries. In 1851 the vessels entered inwards from Australia and New Zealand were 132, of 61,561 tons; and the ships cleared outwards for Australia were 281, of 148,123 tons. In 1853 and 1854 the average tonnage cleared from the United Kingdom for Australia, was 526,000 tons. In 1859, the number of vessels that entered inwards from Australia was 177, of 153,890 tons; and the clearances for Australia were 513 ships and 411,846 tons. Last year there was a falling off in the amount of the trade.

In the forgoing observations, I have taken a hasty summary of Australian progress generally, preliminary to a more special and detailed notice of the separate progress and condition of the colonies, past and present, and of the exertions each is making to be duly represented in all the details of its varied industry at the International Exhibition of 1862. From the official information already received, the Australian Colonies bid fair to be more fully and creditably represented than any of the other British possessions.

Statistics of the Australian Colonies, showing the Progress made in the last Ten Years. Compiled from Official Returns by P. L. Simmonds.

POPULATION (EXCLUSIVE OF ABORIGINES).

Colony.	1850.	1859.
New South Wales & Queensland	265,503	342,062
Victoria	77,345	530,262
South Australia	63,700	127,000
Western Australia....................	5,886	14,837
Tasmania	68,609	90,000
New Zealand...........................	22,408	61,263
	503,451	1,165,424

EXTERNAL TRADE.—VALUE OF EXPORTS AND IMPORTS.

Colony.	Exports from.		Imports into.	
	1850.	1858.	1850.	1858.
	£	£	£	£
New South Wales	1,357,784	4,186,277	1,333,413	6,059,366
Victoria (1851)..........	1,422,909	13,989,209	1,056,437	15,108,249
South Australia	570,817	1,512,185	845,572	1,769,352
Western Australia	22,135	78,648	52,351	144,931
Tasmania	613,850	1,151,609	658,540	1,328,612
New Zealand	115,416	458,023	240,205	1,141,273
	4,102,911	21,375,951	4,186,518	25,551,783

TOTAL LAND UNDER CULTIVATION.

Colony.	1850.	1859.
	Acres.	Acres.
New South Wales..................	144,647	217,443
Victoria (1852)	57,298	358,727
South Australia..............	64,728	270,000
Western Australia.................	7,391	37,137
Tasmania	168,819	208,619
New Zealand.........................	22,058	141,007
	464,941	1,032,933

LIVE STOCK IN 1850.

Colony.	Horses.	Cattle.	Sheep.
New South Wales...	111,458	1,374,963	7,092,209
Victoria (then Port Phillip............	16,495	386,688	5,130,277
South Australia	6,488	68,296	897,866
Western Australia...	2,100	11,000	142,000
Tasmania	18,391	82,761	1,822,322
New Zealand.........	2,723	29,887	160,166
	157,655	1,953,600	15,244,840

LIVE STOCK IN 1859.

Colony.	Horses.	Cattle.	Sheep.
New South Wales ...	200,713	2,110,604	7,581,762
Victoria	68,323	699,330	5,578,413
South Australia* ...	49,339	278,265	2,824,811
Western Australia* .	8,386	30,990	234,715
Tasmania*	20,559	81,737	1,760,847
New Zealand	14,912	137,204	1,523,324
	362,232	3,338,132	19,503,872

* 1860.

GOLD RAISED IN AUSTRALIA IN TEN YEARS.

Years.	Victoria.—Officially recorded Exports, Value.	New South Wales.—Ozs. Valued 77s. per oz.	South Australia.	Tasmania.
	£	Ounces.		Ounces.
1851	580,587	108,464	An average of about 5,000 ozs. yearly has been obtained in this colony since 1852, worth about 80s. per oz.	77
1852	10,899,733	233,862		44
1853	12,600,083	212,501		34
1854	9,568,262	109,895		5
1855	11,172,261	104,092		270
1856	11,942,783	138,823		249
1857	11,046,113	148,126		126
1858	10,112,752	255,535		572
1859	9,122,702	289,283		
1860	8,000,000	260,000		
Estimated as unrecorded..	7,000,000	372,116		400
Total value	102,045,276	£8,595,883	£180,000	£7,108

In New Zealand about 55,000 ounces of gold have been obtained since 1857; in 1857 and 1858 the gold exports thence amounted to £92,886; the value of which, added to the foregoing, gives a total of £111,048,267.

REVENUE OF THE AUSTRALIAN COLONIES.

COLONY.	1850.	1859.
	£	£
New South Wales...........	375,729	1,540,550
Victoria (for 1851)...........	379,975	3,257,724
Tasmania	134,241	1,310,228
South Australia...............	260,561	601,500
West Australia	19,137	52,804
New Zealand.................	82,261	341,655
	1,251,904	6,104,461

DECLARED NET VALUE OF THE TOTAL EXPORTS OF BRITISH PRODUCE, &C., FROM THE UNITED KINGDOM TO AUSTRALIA, IN THE LAST TEN YEARS.

	£		£
1851	2,807,356	1856	9,912,575
1852	4,222,205	1857	11,632,524
1853	14,513,700	1858	10,463,032
1854	11,931,352	1859	11,229,448
1855	6,278,966	1860	9,707,499

Besides the above, about £1,300,000 (in value) of foreign and colonial merchandise is annually exported.

COMPUTED NET VALUE OF THE IMPORTS INTO THE UNITED KINGDOM, FROM EACH AUSTRALIAN COLONY, IN THE LAST SIX YEARS.

COLONY.	1854.	1855.	1856.	1857.	1858.	1859.
N. S. Wales.	1,711,972	1,589,874	2,317,591	2,035,386	1,930,147	1,808,995
Victoria, exclusive of gold...	1,651,649	1,798,790	2,033,654	2,472,479	2,110,277	2,427,820
S. Australia, ditto	433,763	537,939	661,886	653,180	517,552	663,459
W. Australia	35,288	32,392	45,972	43,927	47,941	93,261
Tasmania...	429,924	508,015	576,296	563,113	423,832	499,486
New Zealand	39,262	33,190	100,644	157,220	261,538	341,634
	4,301,92[illegible]	4,500,2[illegible]0	5,736,043	5,925,305	5,291,287	5,834,655

IMPORTS FROM AUSTRALIA.

	Gold (officially registered.)	Wool.
	£	lbs.
1851.........................	—	41,810,117
1852.........................	—	43,197,301
1853.........................	—	47,076,010
1854.........................	—	47,489,650
1855.........................	—	49,142,306
1856.........	—	52,052,139
1857.........................	—	49,209,655
1858.........................	9,064,763	51,104,560
1859.........................	8,624,566	53,700,542
1860.........................	6,719,000	59,166,616

DECLARED VALUE OF THE EXPORTS OF BRITISH PRODUCE AND MANUFACTURES SENT TO THE AUSTRALIAN COLONIES AND NEW ZEALAND, 1852—1860.

	N. S. Wales and Queensland.	Victoria.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1852*	1,632,137	1,615,135	276,545	55,647	493,772	148,969
1853	4,527,775	7,062,387	1,182,885	100,917	1,408,927	*230,809*
1854	4,145,267	6,423,283	1,262,096	70,122	1,183,789	311,429
1855	2,235,760	3,245,788	686,473	92,084	685,144	276,376
1856	3,003,263	6,517,745	931,117	78,263	741,512	400,489
1857	3,596 595	7 511,110	988 610	75,627	594 979	408,204
1858	2,919,544	5,417,601	979,973	82,234	573,175	490,507
1859	2,876,353	6,467,652	653,148	118,045	481,343	632,907
1860	2,483,190	5,378,083	811,048	98,884	632,907	568,769

* The returns for each colony are not particularized for 1851, but the total value in the year was £2,807,356, against £9,707,499 in 1860.

COMPUTED NET VALUE OF THE TOTAL IMPORTS OF MERCHANDISE FROM THE BRITISH SETTLEMENTS IN AUSTRALIA, IN THE YEARS SPECIFIED, INCLUDING NEW ZEALAND.

1854	£4,301,867
1855	4,500,200
1856	5,736,043
1857	5,925,305
1858	5,291,287
1859	5,834,641
1860	6,470,241

The real value was not estimated before 1854.

NUMBER OF EMIGRANTS FROM THE UNITED KINGDOM TO THE AUSTRALIAN COLONIES AND NEW ZEALAND IN THE LAST TEN YEARS.

1851	21,582
1852	87,881
1853	61,401
1854	83,237
1855	52,309
1856	44,584
1857	61,248
1858	32,295
1859	31,013
1860	24,302
Total	508,802

NICKEL COINS.

The following communication has been received from J. W. del Campo, from Holland:—

"Some time since a change in the coins was made in the kingdom of Belgium by introducing nickel coins, as had been the case a few years before in Switzerland. In Belgium, as in France and Holland, the decimal system prevails, which is distinguished favourably over other modes of division, and it is much to be desired that such a system was introduced in England and Germany. It is true that in both countries efforts have been made to adopt it, but hitherto without success. In England particularly, the copper-money is very inconvenient, as well to those who have to make large payments to the working class as to all who have to receive money whether in large or small quantities. The large copper coins have a disagreeable smell, and are ugly; the new ones, it is true, are smaller, but still too large. On the Continent silver pieces are used, and the Belgian Government passed a law, on the 20th December, 1860, that coins of a halfpenny, a penny, and two-pence, should be made of copper, containing 20 per cent. of nickel. This is considered to be a great improvement. Nickel coins look like silver; they are small, light, and do not smell or oxidate.

"I have the honour to offer the Society of Arts a specimen of nickel coins. The weight of a nickel penny* is 4½ grammes (about 1 dram); that of an English penny 50·4 grammes (10⅔ dr.); half-penny and two-pence pieces, weigh 3 and 7 grammes.

"Nickel mines are found in Belgium, and are worked.

"The nickel ore is heated to drive away the arsenic, which it always contains, then mixed with sand and carbonate of soda, and heated again, when the pure nickel metal is separated on the bottom of the furnace.

"Nickel is used to a large extent in the manufacture of ornaments, which have the appearance of silver.

"Nickel oxide N_2O_3 is used to colour glass and porcelain. It is black coloured, but, as I have remarked, it is not easily formed on the coins."

THE OAR.

Probably the most ancient mode of propelling boats through the water by hand-labour was by means of oars, of nearly the same shape, and worked in the same manner, as those now in use; and to all appearance there is no likelihood of a change, for although many savage tribes work their canoes and other narrow boats with hand-paddles, and attain great speed with them, yet seamen of civilised nations, whose boats are mostly of a more burdensome character, and whose bodies are encumbered with clothing, have, without exception, given preference to the oar, as an instrument of greater power, and worked with more convenience.

And, truly, there is no more beautiful instrument than an oar, when we consider its simplicity, the ease with which it is worked, and the readiness with which its position is accommodated to the ever-varying motion of the boat and the sea's surface. It has often been proposed—indeed, it is a favourite notion with theorists—to propel life-boats by rotatory paddle-wheels and screws, such as those of steamers, but the proposition is altogether an impractical one, and its trial could only result in failure. Where great power and velocity of motion can be applied, as by steam, undoubtedly the rotatory form is the most convenient mode through which to apply it, and accordingly both screws and paddle-wheels work advantageously, until the rolling or pitching motion of a ship becomes very violent, when a great waste of power ensues; for instance, when a ship rolls so deeply that the paddles are alternately too deeply immersed, and spinning round in the air; or if a screw ship, when she pitches so much that the screw is raised to the water's surface, or lifted above it. When, therefore, it is considered how much more violent is the motion of a boat in a heavy broken sea than that of a ship, it will be readily conceived that a fixed machine, such as a wheel or screw, even if it could be worked on so small a scale by steam power, would do so at a still greater disadvantage. Whereas the oar, obedient to the quick eye and ready arm, varies its position with every motion of the boat or wave, and in skilful hands is always working at "full power."

But there is another point of importance, not to be lost sight of. A paddle-wheel or screw cannot be worked in a life-boat by steam power, but must be so by means of a crank worked by hand. Now it is known to every one that the muscles of the human body are strengthened by use, and that, therefore, persons engaged on any particular bodily labour have those muscles especially strengthened that are constantly brought into play. Thus, a sailor would stand little chance in a walking-match with a professional pedestrian; whilst the latter would as vainly attempt to overtake the former in a race over his ship's mast-head. It follows then, that, apart from its other advantages, the oar is possessed of this especial one, that it is in daily use by the only class of men on the coasts who are available to form the life-boat's crew, viz., the hardy race of fishermen and boatmen who earn their daily bread on our shores.

An oar being, then, the only instrument by which a a life-boat can be propelled, too much care cannot be bestowed on it. Its size, weight, length, material, width of blade, balance, mode of attachment to the gunwale; its height above the water, and above the thwart on which the rower is seated, and the distance of the thwarts and oars apart, are all points of much importance, on which the speed of the boat, or its power to make way against a head-sea much depend.

An oar is a simple lever, of what is termed the second order, that is, wherein the weight or body to be moved lies between the fulcrum and the motive power; the water being the fulcrum of the lever, the gunwale of the boat the point at which its power is applied to the moving body or weight, and the rowers' arms being the source of power.

Fir oars have always been considered the most desirable for life-boats, as they do not bend so much as ash oars, and as they float much lighter in the water, and will therefore better support any persons in it in the event of accident. Experiments have been made by the National Life-Boat Institution to test the relative strength of oars, when it was ascertained that an oar made from a good white Norway batten, or from a white Baltic spar, will bear as great a strain as any other, each being as free of knots as possible.

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* Nineteen Belgian pence = Twenty English pence.
One gramme = one-thousanth of a pound (*livre*).
One *livre* = 0·454 English pound.

The length of an oar must of course be proportional to the width of the boat, and it should be so poised on the gunwale that the rower can raise or depress it or move it in any direction with the smallest effort. An oar should be not less than five inches wide in the blade, or it will expose so small a surface to the water as to cut through it, and so work on a too yielding fulcrum, with comparative loss of power.

The height above the thwarts of the thowl or rowlock in which the oar works on the gunwale, should be sufficient to enable the rower to lift the blade well above the waves by depressing the loom or handle; but, on the other hand, it must not be so high as to require him to raise his arms above the level of his chest in rowing, in which case he will row with much less force, and be much sooner fatigued. A height of eight inches from the thwarts to the oar on the gunwale will be found a suitable average.

Lastly, the mode of confining the oar to the gunwale of the boat is of much consequence. The most common modes, in ordinary boats, are rowlocks and double pins, between which the oar works, but as an oar is liable to jamb in the rowlock or between the pins, when rowing in a rough sea, and thereby to get broken, or to damage the gunwale, the oars of life-boats have generally been worked in a rope grummet or ring, over a single iron thowl-pin; a further advantage of this plan being that it enables the oars to lie along the outside of the boat when not in use and thus saves the necessity of unshipping them and getting them in-board on going alongside a wreck, which is a great advantage.

FIG. 1.

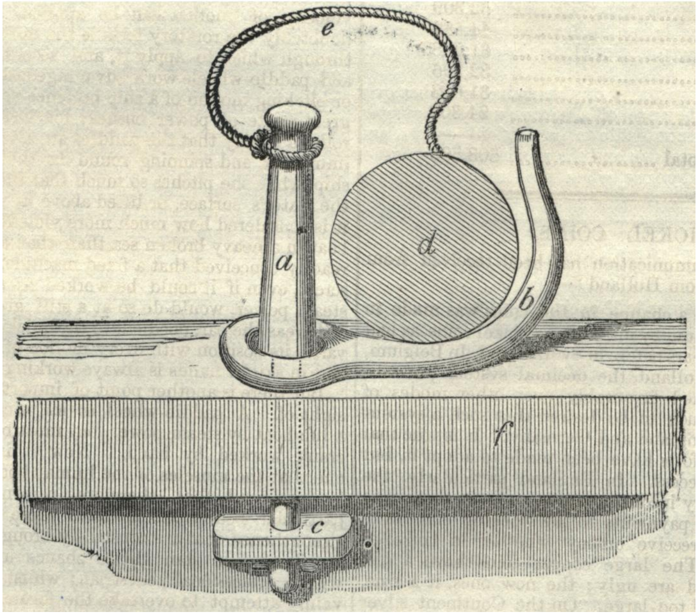
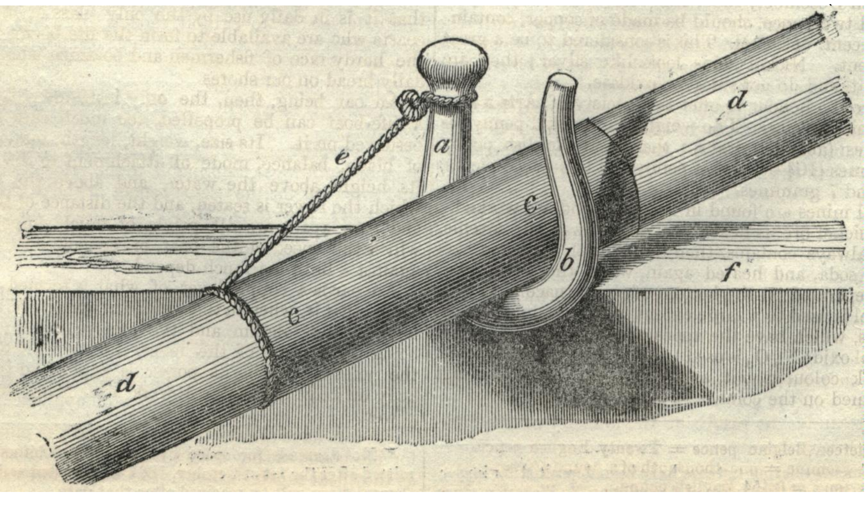


FIG. 2.



A new description of swivel-crutch, intended as a substitute for a grummet, has recently been planned for the National Institution's life-boats, by its inspector, Captain Ward, R.N., which is found to have the advantages of the grummet, and to be more convenient in some respects.

As it will be found to be a very useful kind of crutch for general use in boats, a sketch of it is given (see preceding page).

Figure 1 represents the inside of a boat's gunwale, with a section of the oar within the crutch, the latter supported on the gunwale in the position in which it remains whilst the oar is in use. *a* is an ordinary iron thowl-pin; *b*, the crutch, also of galvanized iron, which revolves round the thowl as an axis; *c*, a clamp or chock, which receives the lower end of the thowl; *d*, a section of the oar; *e*, a short laniard with a running eye, which is slipped over the head of the thowl whenever the oar is required to hang over the side; *f*, the gunwale.

Figure 2 shows the oar when let go by the rower and allowed to hang alongside outside the gunwale. *a*, the thowl; *b*, the crutch; *c*, the leathering on the oar, to prevent chafe; *d*, the oar as hung alongside; *e*, the laniard spliced round the oar, below the leathering, and nailed on to prevent its slipping round or along the oar; *f*, the gunwale.

The principal advantage of the swivel-crutches over grummets is, that they are of a more durable character, are fixtures, and so not liable to be mislaid or lost, and retain always the same size and shape, whereas a grummet is liable to stretch by use, when the oar will work too loosely in it.

INTERNATIONAL PHILANTHROPIC CONGRESS OF 1862.

It appears from papers in French, of which abstracts are subjoined, that the Fourth Session of the International Philanthropic Congress is to be held in London next year, on the occasion of the Great Exhibition. Among the noblemen and gentlemen who have expressed their concurrence are, Lord Brougham and the Council of the National Association for the Promotion of Social Science, the Earl of Shaftesbury, the Earl Ducie, the Earl Fortescue, Lord Ebury, Lord Raynham, the Right Hon. W. Cowper, M.P., Sir Thomas Phillips, Alderman Mechi, Mr. Harry Chester, Mr. Samuel Gurney, M.P., Mr. Edwin Chadwick, C.B., Mr. Henry Roberts, Mr. George Godwin, F.R.S., Mr. T. Twining, Dr. Sutherland, F.R.S., and Dr. Southwood Smith, F.R.S.

Extract of Letter from Monsieur Ed. Ducpetiaux to T. Twining, Jun., Esq.

MY DEAR FRIEND,—In a recent interview with the Viscount de Melun, President of the Société d'Economie Charitable, of which I am one of the Vice-Presidents, we discussed the question of the next meeting of the Congrès International de Bienfaisance, which has held its three previous meetings, at Paris in 1855, at Brussels in 1856, and at Frankfort in 1857.* After mature deliberation, we think that the Fourth Session might be convened in London in 1862, on the occasion of the International Exhibition of the Products of Industry and Art of all Nations. But it is necessary that we should obtain the co-operation either of the National Association for the Promotion of Social Science, or of a Special Committee of eminent and influential persons, animated by the same feelings as ourselves, and who would be disposed to act with us.

Be pleased, therefore, to communicate these lines to the persons you may deem best qualified to aid in carrying out this project. It is closely connected with the Exhibition, where amid the results of the industry of the civilized world, the condition of those who produce these results will most naturally rise to mind. Production is assuredly an admirable thing, but the producer has also some claim to our attention and solicitude. This will not be denied in a country which stands foremost in the number and importance of its useful and charitable institutions.

If, as we hope, our project be entertained, it will only remain to take the steps necessary to carry it out. With this object, the Committee of the Société d'Economie Charitable of Paris places itself at your disposal. If deemed necessary, it will send delegates to London, at any time specified, to arrange the mode of procedure, the constitution of the Committee entrusted with the organisation of the Congress, the programme of its operations, the time of meeting, &c.

Believe me, &c.,
ED. DUCPETIAUX.

A Circular, in the French language, of which the following is a translation, has been extensively circulated abroad:—

SIR,—The Société d'Economie Charitable of Paris, has entrusted to me the preliminary steps for convening the Fourth Session of the International Philanthropic Congress, in London, in 1862, on the occasion of the Great Exhibition. Thanks to the co-operation of the National Association for the Promotion of Social Science, the steps taken hitherto have been completely successful, and the list of adherents already includes a considerable number of persons eminent by position and for their philanthropic sentiments. A committee of organisation will be formed without delay, to fix the date and programme of the meeting, of which notice will be duly given.

The committee will endeavour to turn to the best account the resources which the Exhibition will offer in a benevolent point of view, by ascertaining what articles are most deserving of the attention of the Congress, and by making every necessary arrangement in order that the visits of inspection may be both easy and productive of practical results. It is, however, necessary that the members themselves should do all in their power, that while the interests of commerce and luxury are fully provided for, those of Christian charity may be adequately represented.

It is therefore desirable that, in concert with the Commission appointed by your Government, you should endeavour to elicit demands for space* in favour of objects calculated to promote the well-being of the working classes and the poor. The assurance of due appreciation and extensive publicity will be an encouragement to manufacturers whose productions might, under other circumstances, be less remunerative than useful. Your influence might also be beneficially exercised with Societies and individuals able to exhibit models, drawings, collections, or articles, having a philanthropic or an educational tendency.

The subjoined list may suggest some of the desiderata with respect to which your co-operation would be most valuable:—

ARCHITECTURE.—Models, Plans, and Working Drawings of Buildings conformable to the princples of hygiene, and intended for the use or benefit of the working classes; *e.g. Cités Ouvrières*, Model Dwellings for Town and Country, Hospitals and Asylums, Infant Nurseries, Baths and Washhouses, Working Men's Coffee-houses, Public Slaughter-houses, Depositories for the Dead.

BUILDING MATERIALS.—Cheapness, Durability, Impermeability, &c.

COTTAGE FURNITURE.—A Sanitary Committee, appointed by Her Majesty's Commissioners for the International Exhibition of 1862, proposes to organise a series of experiments on the relative value of appliances for warming, lighting, &c. Manufacturers are also invited to undertake careful experiments,[*] and to transmit the results to F. R. Sandford, Esq., the Secretary of the International Exhibition of 1862.

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* Documents relating to these have been deposited for inspection at the Office of the National Association, 3, Waterloo-place.

* No demands for space by English Exhibitors will be admitted after the 1st of October, 1861, but the demands of Foreign Commissions will be received after that date.

Clothing.—Fabrics and Articles of Clothing deserving of attention in a hygienic point of view; Costumes for Children and Adults adopted by charitable institutions or public establishments, or customary in certain industrial occupations; National Costumes.

Food.—New Resources; Preservation; Purification; Analysis, with respect to the Nutritive Properties, detection of Fraud, &c. (For details, see the Memorandum, entitled "Museums for the Working Classes," to be had at the Society of Arts.)

Public Safety.—Hygiene.—Protection against inundations, &c.; Drainage; Sewerage; Water Supply; Ventilation; Prevention of damp, smoke, &c.; Cheap Hygienic and Medical Appliances; Means of Relief for Infirmities of every kind, and of occupation for the Infirm; Improved Ambulances; Protection against Beasts of Prey, Vermin, &c.; Means of Relief for cases of Poisoning, Asphyxia, &c.; Means of Safety against Shipwreck, Fire, Railway Accidents, &c.; Protection against excessive Heat and Cold; Means for the prevention or relief of the Injuries and Diseases to which the Working Classes are liable in the exercise of their occupations (See the Memorandum mentioned above); Contrivances for lightening Labour, for acilitating conveyance of Burthens, &c.

Popular Education.—This important department could not be overlooked in an Exhibition organised by the Society of Arts, whose influence has of late years been so successfully directed to the education of the industrial classes. A Committee, which includes men of eminence in this department, has drawn up a detailed list of educational appliances, which may be obtained on application, either to F. R. Sandford, Esq., Office of the International Exhibition of 1862, 454, Strand, London, or to P. Le Neve Foster, Esq., Society of Arts, Adelphi, London. The friends of popular improvement will doubtless be glad to co-operate, by promoting the exhibition of everything which their respective countries can supply, best calculated for the education of the poor, and for the easy and agreeable development of the mind, with a view to the practical purposes of life.

I have the honour, &c.,
T. TWINING, Jun.,
Honorary Secretary *ad interim* of the International Philanthropic Congress of 1862.

National Association for the Promotion of Social Science,
3, Waterloo-place, London, Sept. 12, 1861.

EXAMINATION PAPERS, 1861.

(*Continued from page* 737.)

The following are the Examination Papers set in the various subjects at the Society's Final Examinations, held in April and May last:—

LOGIC AND MENTAL SCIENCE.

THREE HOURS ALLOWED.

All candidates should answer six Logic questions, and four questions in each of the other books which they have studied.

Logic.

1. Explain proper, singular, and common nouns, and substantive, attributive, and relative nouns, with examples.

2. Describe generalisation. What is the *summum genus?*

3. What are the rules of logical division? Give examples of their violation.

4. Draw out in proper form the following arguments, and examine their correctness:—

A question cannot be a proposition, for it neither affirms nor denies.

It is so like his handwriting that I am sure he wrote it.

He has a project for improving the plough, therefore I distrust him, as I do all projectors.

The examples of gold, silver, and copper, show that all metals will melt.

Crimes of madness are excused for want of intention; since no one can form a purpose, properly speaking, whose mind is diseased.

No one is rich who has not enough, and as no miser has enough, no miser is rich.

Every one desires happiness; virtue is happiness; therefore every one desires virtue.

Warm countries alone produce wines; Spain is a warm country: therefore Spain produces wines.

Opium is a poison, and therefore physicians sometimes give their patients poison.

Two kinds of things we ought not to fret about; what we can help and what we cannot. (Draw out as a dilemma.)

5. What is the opposition of judgments? Give all the opposites of these, marking which are true and which false.

Old sciences may be taught.
No tyrants are beloved.

6. Explain ambiguous middle term, as a source of falacies, with illustrations.

7. On what principle are we justified in being content with an imperfect enumeration in an induction?

8. What is the modality of propositions? What has been the dispute about its place in logic?

9. Define the following words, mentioning in each case the kind of definition employed:—Science, wealth, originality, wit, animal, gold.

10. "Language records and preserves the results of thought." Explain and illustrate.

11. Give examples of enthymeme, dilemma, and logical example.

12. What are arguments from chance? How do you state the chance that a thing which has occurred seven times will occur again?

Paley's Moral Philosophy.

1. "What some say of Contracts of Hazard, that one side ought not to have any advantage over the other, is neither practicable nor true." What are contracts of hazard? Explain the meaning of the passage, with illustrations.

2. "Whatever is expedient is right. It is the utility of any moral rule alone which constitutes the obligation of it." Show the perversion of which this *dictum* is capable. Define "expedient" and "right" so as to obviate them.

3. Discuss the question whether promises are binding which are made under fear or compulsion.

4. Explain the theory of a "social compact." Give Paley's objections to it, and describe his theory of submission to civil government.

5. State Paley's views on the object of punishment, the kinds of it, and the extent and the certainty of it.

6. What objections have been taken to Paley's principle of moral science? Give your opinion of their weight.

7. How does Paley prove the unlawfulness of *suicide?* Criticise his view.

8. Enumerate the different kinds of contract.

Butler's Sermons.

1. Give a very brief account of the aim of Butler's three sermons upon Human Nature, and of the theory that would be most completely opposed to it.

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[*] Indications of the mode in which it is desirable that these experiments should be performed will be supplied by the Committee.

2. Show that compassion is a natural feeling, and that it works for good both to those who feel it and those who are its objects.

3. What is Bishop Butler's doctrine as to anger and resentment? How do we reconcile it with the duty of forgiveness of injuries?

4. State Butler's rules for avoiding self-deceit.

5. "Knowledge is not our proper happiness." In what connexion does Bishop Butler use these words, and how does he prove them?

6. Give some account of the character of Balaam. How does Butler make this subject bear on the rest of his system?

7. Compare the view of morals in these sermons with any other view with which you may be acquainted.

STEWART'S PHILOSOPHY OF THE HUMAN MIND.

1. What does Stewart mean by "men of general views?" How does he distinguish men as to their powers of generalisation?

2. What account does he give of the views of others as to the origin of our knowledge?

3. How much power does the mind possess over the trains of thought suggested to it?

4. What is wit? How much have surprise and readiness to do with it? Criticise Stewart's view?

5. What are the principles on which the culture of the memory depends?

6. How far does *contiguity in time* influence the association of our ideas? Give illustrations.

7. "Imagination is not a simple power of the mind, but is formed by a combination of various faculties." Explain this.

BACON'S NOVUM ORGANUM.

1. Explain what Bacon means by Idols of the Tribe, and Idols of the Theatre. Give illustrations.

2. What is Bacon's estimate of Logic? How far is it just?

3. What were the principal impediments to Natural Philosophy, as Bacon describes them?

4. "Substance, quality, action, passion, and existence are not clear notions." Explain this. Why do these abstract notions fail of clearness?

5. How does he distinguish the *anticipation* and the *interpretation* of nature?

6. "Our method and that of the sceptics agree in the outset, but differ widely in the conclusion." How is this?

7. What service did Bacon perform for science?

(*To be continued.*)

Home Correspondence.

◆

THE PATENT QUESTION.

SIR,—It seems to be a contested point, whether the granting of letters patent by the government stimulates the inventive genius of the country, or is beneficial to the public.

In order to meet the question fairly, it will be necessary to illustrate a case of constant occurrence. Suppose several establishments in the immediate vicinity of each other are engaged in the extraction of silver from its ore. They resort to the best method then known, which, however, is rude, tedious, affording very small profit for the time, labour, and money expended.

The proprietor of one of these works, dissatisfied with the product by the then existing method, institutes a series of elaborate experiments, covering many years; at last he is rewarded by arriving at a process, which not only yields a much greater per centage of silver, but is much less expensive and more simple in operation.

So great is the improved mode that the rival establishments cannot compete with any chance of success. If they desire to avail themselves of the benefits which have resulted from the scientific labours of their neighbour, it must be on such terms as will remunerate the inventor. Otherwise, having already the monopoly, and no one can compel him to divulge it, he has the secret, which has its intrinsic money value. In fine, it yields ten times more than the possession of a patent, and he refuses all overtures, working the invention to his own profit. He can afford to pay higher wages, and in a short time all his competitors are obliged to close their works, because they cannot contend with the secret process.

There is hardly a branch of manufactures to which this argument will not apply. It is at this juncture that the government, in order to prevent a monopoly of so disastrous a character, steps in, and says to the inventor—"Specify your secret in detail, so that the world shall have the benefit of your investigations and discoveries, and as an equivalent you shall have a limited monopoly, in the form of letters patent." It must be always remembered that if the discovery or invention is not substantially an original one, these letters patent are void.

The most simple and beautiful discoveries have been the adaptation of well-known principles to useful purposes.

Pattinson's chemical knowledge enabled him to apply a most simple principle to a most important improvement in the extraction of silver from lead, merely by the former being fused at 1280° Fahr., while the latter required but 630° to effect the same result. Yet until 1829 no one had thought of making the practical application of these long-known facts, which, however, required much time and experiments to render of practical value.

Both Dr. Wollaston and Sir H. Davy made novel applications of well-known principles.

The intense heat produced by the combination of hydrogen and oxogen gases was applied by Wollaston to the fusing of platinum, a metal which had resisted all attempts at reduction.

Sir H. Davy's safety lamp is based on the conductability of heat by metals.

In fine, all really great discoveries or inventions, from the earliest periods of time, have been but the adaptation of the most simple principles known to science, to the accomplishment of a result in a more complete and beneficial manner than hitherto effected.

The refraction of light when passing from one medium to another, comprises the history of telescopes and microscopes, with their wonderful revelations. The evaporation of water explains to the scientific mind the steamboat, the locomotive, and all the consequences resulting in the relations of mankind. The mere change in the condition of matter envelopes that latent giant, electricity.

The falling of an apple awoke a thought in Newton's mind, which resulted in the discovery of the laws of gravitation.

If men of science devote their time to the attainment of an object, by the application of these simple truths of nature, which eventuate in the improvement of any special department of industry, they should be compensated in accordance with the value and merits of their discovery or invention.

The only equitable patent law is that adopted by the Belgian Government, which divides the payment of the fees, increasing annually—the first year being 10 frs.; the second, 20 frs.; the seventh, 70 frs.; and the twentieth, 200 frs. The patentee is also allowed six months to pay the fee, at the end of each year, by the forfeiture of 10 frs.

Suppose the English patent law was based on this principle, commencing at £1, and increasing each year by the same sum, it would ensure a much larger revenue to the Government, and the payments would be commensurate with the successful working of the patent.

Our present law is most onerous, and calculated to impede the object it is intended to promote, namely, the encouragement of inventive genius.

In the first instance, what with the Government fees and agent's charges, few patents can be secured under £40, which only protects the inventor for three years, a period which is barely sufficient, under the most favourable circumstances, to develope the value of the patent.

Now another tax is required, of £50, to extend the patent for an extra four years. At this stage, three-fourths of all the patents taken out are allowed to lapse and become void. Nor is the injustice ended, for, at seven years' maturity, £100 is demanded to extend to seven years longer, or fourteen years in all.

It is a grave error to imagine that, in a great number of instances—say half—the patents are allowed to cease because of their being valueless, or not having intrinsic merit, but from the utter inability to meet so heavy a tax. It has become an axiom, "that an inventor is a man without means," and it is true as a rule. The best and most successful inventors are the worse financiers—it is the exception that the inventor or discoverer reaps any real benefit from the patent, this arising more particularly from the unjust mode of levying these exorbitant fees.

The indiscriminate issue of patents to all applicants is fraught with every disadvantage to the original inventor. The provisional protection should be issued for one year, after having been subjected to a rigid scrutiny by a court of competent examiners. If found to be original and useful, then on the payment of a small fee the certificate should be issued, affording protection to the applicant. The final specification should define the nature of the invention, and the mode of carrying it into effect, in such clear and unambiguous language as to admit but of one interpretation. At present, many specifications are so confused, foggy, and unintelligible, that it is with the greatest difficulty that even an approximation of the real intention of the patentee can be arrived at.

Under the present system patents are applied for and issued merely to obstruct the successful working of other patents, which the applicant of "the obstructive patent" has become accidentally or surreptitiously acquainted with. These and numerous other defects would be effectually remedied by the appointment of competent examiners, who would allow no application to receive provisional protection, except it comprised a substantial, original invention, in the strongest sense of the term.

It is to be desired that the recent ventilation of the patent system, at the British Association and other places, will result in Parliament enacting such measures as will modify and revise the present imperfect system, so as to render of real value the possession of a patent.

I am, &c.,
ROBT. H. COLLYER, M.D., F.C.S., &c.
Bete House, Alpha-road, St. John's-wood, N.W.
Sept. 12th, 1861.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, September* 20*th*, 1861.]

Dated 11*th July*, 1861.

1745. W. Cooke, 26, Spring-gardens—An improved wind guard for curing smoky chimnies.

Dated 30*th July*, 1861.

1900. A. Parkes, Birmingham—Imp. in the manufacture of sheathing metal for ships and vessels.

Dated 1*st August*, 1861.

1914. E. J. Muggridge, 6, St. John's villas, Adelaide-road, St. John's-wood—Imp. in machinery or apparatus for washing clothes and other textile articles.

Dated 3*rd August*, 1861.

1925. M. Merryweather and R. M. Merryweather, Long-acre—Imp. in pumps applicable to steam and other fire engines.

Dated 7*th August*, 1861.

1964. M. A. F. Mennons, 39, Rue de l'Echiquier, Paris—Imp. in certain descriptions of breech-loading fire-arms. (A com.)

Dated 10*th August*, 1861.

1995. W. S. T. Clarke, Charing-cross, Westminster—Imp. in railway breaks.

Dated 15*th August*, 1861.

2031. J. Bethell, 38, King William-street—Imp. in the manufacture from steatite of journals, axle boxes, and bearings for machinery, axles, and spindles to work in smoking pipes, buttons, crucibles, and pots for chemical and smelting purposes, and also of a lubricating compound for railway and other carriages.

Dated 19*th August*, 1861.

2061. T. Pedrick, 5, Park-place, Brixton—Imp. in obtaining and applying water motive power.

Dated 20*th August*, 1861.

2063. G. Ingram, Old-street—Imp. in trams to be used in connection with the wheels of carriages on common roads.

Dated 22*nd August*, 1861.

2097. B. Samuelson, Banbury—Imp. in harvesting machines. (Partly a com.)

Dated 23*rd August*, 1861.

2107. A. B. Childs, New Oxford-street—Imp. in means to be employed in the dressing or cracking of millstones. (A com.)

Dated 27*th August*, 1861.

2131. Z. Colburn, 15, Tavistock-street, Bedford-square—Imp. in the arrangement and combination of high and low-pressure steam engines.

Dated 28*th August*, 1861.

2147. M. Theiler, Einsiedeln, Switzerland—Imp. in type printing telegraphs.

Dated 30*th August*, 1861.

2154. R. Penrose, Coley Mill, near Halifax—Imp. in screw stocks and dies. (A com.)
2156. R. Shaw, Portlaw, Waterford, Ireland—Imp. in windlasses, capstans, and other machinery for hoisting and lowering weights.
2160. W. E. Gedge, 11, Wellington-street, Strand—Imp. in thrashing machines. (A com.)
2168. W. Clark, 53, Chancery-lane—Imp. in shirts and chemises. (A com.)

Dated 31*st August*, 1861.

2170. H. Keach, 16, Bedford-terrace, Andover-road, Holloway—An imp. in the ornamentation of woven and other fabrics for garments and parts of garments.
2172. T. M. Jones, Great Pulteney-street—Imp. in apparatus for suspending and turning meat, fowls, and such like articles for roasting.
2174. C. Pemberton, Deptford—Imp. in railway, ship, and other signals.
2181. C. W. Siemens, 3, Great George-street, Westminster—Imp. in apparatus employed in connection with electric telegraphs, part of which imps. are also applicable to ascertain the heat in inaccessible places. (Partly a com.)

Dated 2*nd September*, 1861.

2184. T. S. Stock, J. S. Stock, and H. Taylor, Birmingham—A new or improved tap or stop cock. (A com.)
2186. W. Muller, 62, High Holborn—Imp. in apparatus for roasting coffee, which imps. are also applicable to the roasting of cocoa and other vegetable matters.
2190. A. N. Saleres, 170, Rue de Charonne, Paris—Imp. in printing and coloring paper, chintz, and other fabrics, and machinery or apparatus for that purpose.
2192. W. Campion and H. Johnson, Nottingham—Imp. in machinery or apparatus for cutting the selvedges or edges of knitted or other fabrics while being stitched.

Dated 3*rd September*, 1861.

2194. J. Gresham, Manchester—Imp. in mechanism or apparatus for facilitating the stopping and starting of omnibuses and other vehicles.
2196. P. Robertson, Sun-court, Cornhill—Imp. in treating yeast, and in the manufacture of ammoniacal salts and a substitute for animal charcoal.

Dated 4*th September*, 1861.

2200. R. A. Brooman, 166, Fleet-street—A new or improved parachute toy. (A com.)
2202. L. R. Bodmer, 2, Thavies-inn, Holborn—Imp. in distilling apparatus. (A com.)

Dated 5*th September*, 1861.

2204. J. K. Bayley, T. Harrison, and W. Briggs, Bolton-le-Moors, and R. Parker, Atherton, Lancashire—Imp. in machinery for preparing and spinning cotton and other fibrous materials.
2205. H. Young, Birmingham—Imp. in counter or pillar beer engines.
2206. R. McConnel, Glasgow—Imp. in locks.
2207. J. M. Rowan and T. R. Horton, Glasgow—Imp. in steam boilers and surface condensers.
2208. C. Edkins, Birmingham—Certain imp. in ladies' dress suspenders.
2209. J. E. Ridges, Wolverhampton, and J. Barker, Birmingham—Certain imp. in composite carriages for funeral and other purposes.
2210. D. Heyworth, Featherstall Mill, Littleborough, and J. Heyworth, Manchester—Certain imp. in looms for weaving.
2211. P. Effertz, Manchester—Imp. in machinery or apparatus for making bricks, tiles, drain pipes, and other similar articles.

2213. F. Bennett, Upper Works, Bagillt, Flintshire—An improved method of coating the interior surface of lead and lead composition pipes with tin or its alloys.
2216. J. Napier, Glasgow—Imp. in the manufacture of armour plates for the protection of vessels of war, floating or other batteries.
2217. J. Napier, Glasgow—Imp. in apparatus for cooling the water employed for condensing steam or other purposes.
2218. J. Napier, Glasgow—Imp. in machinery for rolling iron or other metals.
2219. C. W. Harrison, Holland-grove, Brixton—Imp. in the construction of castors.
2220. T. Greenwood, Leeds—Imp. in machinery for sawing wood.
2221. J. Reid, Leith—Imp. in the treatment of gas, and the apparatus employed therein, with a view to its more accurate measurement in wet gas meters.

Dated 6th September, 1861.

2223. M. A. F. Mennons, 39, Rue de l'Echiquier, Paris—Imp. in ribbon looms. (A com.)
2225. W. Spence, 50, Chancery-lane—Imp. in apparatus for dividing and softening vegetable fibres. (A com.)
2229. C. F. Kirkman, Palace New-road, Lambeth—Imp. in obtaining manure from sewerage, and in the apparatus employed therein.
2235. T. G. Messenger, High-street, Loughborough—Imp. in glazing horticultural buildings, the roofs of railway stations, and other erections.

Dated 7th September, 1861.

2243. R. O. White, Blackheath-park, Surrey—Imp. in the manufacture of bricks.

Dated 9th September, 1861.

2245. G. Malcolm, Dundee—Imp. in machinery or apparatus for softening or treating jute, hemp, flax, or other similar fibrous substances.
2247. W. Dowell and J. Dowell, Rhyl, Flintshire—A new or improved motive-power engine.
2249. A. Frier, St. Anne's Retreat, Sutton, Lancashire—Imp. in propellers and in propelling vessels through water.
2251. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in machinery or apparatus for making cigars. (A com.)
2253. R. A. Brooman, 166, Fleet-street—An improved method of producing mixed coloured woollen and other threads. (A com.)

Dated 10th September, 1861.

2255. J. Anthony, 10, Oxford-terrace, Poplar—Imp. in steam boilers and generators.
2257. J. Smith, Sadlers-place, London-wall—Imp. in sewing machines.

Dated 11th September, 1861.

2259. R. Restell, Croydon, Surrey—Imp. in the means of connecting and disconnecting engines and tenders to and from trains.
2261. J. Bowns, Earlstown, Lancashire—Imp. in railway wheels and railway breaks.

Invention with Complete Specification filed.

2268. M. A. F. Mennons, 39, Rue de l'Echiquier, Paris—An improved combination of chemical and mechanical processes for the conversion of fibrous vegetable matters into paper pulp. (A com.)—12th September, 1861.

Patents Sealed.

[*From Gazette, September 20th*, 1861.]

September 19th.

696. J. Ridley.
701. N. Lloyd and J. G. Dale.
709. G. Baxter.
713. A. Heaven and R. Smith.
716. W. M. Cranston.
724. E. Humphrys.
725. T. Thomas.
728. C. E. Swindell, J. Russell, and J. Price.
729. A. Haley.
736. J. Billing.
737. J. Spencer.
738. T. Cardwell & D. Campbell.
739. H. Wickens.
741. P. R. Hodge.
742. J. T. Holden.
744. J. Grant.
745. J. Brown and R. Gregson.
748. J. Morgan, A. T. Jay, E. Edwards, and J. Tilston.
749. W. Brookes.
753. J. Chatterton & W. Smith.
759. T. Davison & R. Paterson.
768. J. M. Dunlop.
773. P. M. Parsons.
784. J. Rattray.
788. W. D. Napier.
789. J. J. L. Guiblet and J. Rambal.
790. D. Sutton.
798. G. Edmondson.
807. W. Brookes.
817. W. Clark.
834. M. Benson.
853. T. G. Ghislin.
875. W. E. Newton.
910. A. F. Delaunoy.
935. R. Hodgson and E. Holden.
1154. J. H. Johnson.
1445. H. De Simencourt and J. K. Blackwell.
1702. W. E. Newton.
1798. J. Mason.
1802. A. V. Newton.
1813. J. A. Jaques and J. A. Fanshawe.

Patents on which the Stamp Duty of £50 has been Paid.

[*From Gazette, September 20th*, 1861.]

September 17th.

2149. W. Richards.
2306. G. T. Bousfield.

[*From Gazette, September 24th*, 1861.]

September 20th.

2124. A. M. Perkins.
2130. R. A. Brooman.
2137. A. F. Jaloureau.
2150. G. L. Fuller.

Patents on which the Stamp Duty of £100 has been Paid.

[*From Gazette, September 20th*, 1861.]

September 17th.

2017. S. Crabtree.
2143. G. Collier.

September 18th.

2021. J. Cunningham.
2060. R. McConnel.

[*From Gazette, September 24th*, 1861.]

September 20th.

2041. W. Hodson.
2114. J. Penn.

LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietor's Name.	Address.
4387	July 19.	Washing Machine	William Whitley	6, Queen's-road, Bayswater, W.
4388	" 22.	Valve for Gas Furnaces	Giden Blake	6, St. George's-terrace, Trowbridge, Wiltshire.
4389	" 27.	A Combined Food Preparer	James Barry	Newton Abbott, Devon.
4390	Aug. 1.	A Combined Spittoon and Footstool	Charles W. Heckethon	8, St. Ann's-road, Brixton, S.
4391	" 1.	The Blanch Combined Muzzle Stopper Oil Bottle, Nipple Pricker, and Rifle groove Protector	Wm. H. Blanch	Liverpool.
4392	" 5.	The Ventilated College Cap	Joseph Hardwick	429, High-street, Cheltenham.
4393	" 7.	Lynch-pin, specially adapted for Gun Carriages	George Hazeldine	5, Lant-street, Borough, S.
4394	" 7.	Portable Music and Reading Stand	Wm. Harrison Barwell	Northampton.
4395	" 7.	Combined Rifle Muzzle Stopper and Sight Protector	James Kerr	Henry-street, Bermondsey, S.
4396	" 12.	Portable Photographic Operating Chamber	Wm. White Rouch	180, Strand, W.C.
4397	" 13.	Weighing Machine	Day and Millward	Birmingham.
4398	" 14.	A Malt Shovel	Faviell and Burrell	Leeds.
4399	" 14.	A Page and Dress holder	George Speight	5, St. John's-street-road, Clerkenwell.
4400	" 16.	A Glue Pot	Griffith and Browett	Birmingham.
4401	" 22.	Lock Spanner	Drury, Bros. and Walker	Don Iron Works, Sheffield.
4402	" 24.	Agricultural Drill	James Nason	Stratford-on-Avon.
4403	" 26.	The Blanch Combined Rifle Sight-Protector, Object Tube, Nipple Key, and Turn Screw	Wm. H. Blanch	Liverpool.
4404	" 26.	An Improved Stamp Guide Bar	Isaac Marshall	Nottingham.
4405	" 28.	A Register Holder for Rifle Practice and other purposes	Isaac W. Petty	Manchester.
4406	Sept. 7.	The Imperial Toilet and Travelling Bag	C. A. Orth and Sons	15, Chiswell-street, E.C.
4407	" 10.	Dispatch Box	Parkins and Gotto	24 and 25, Oxford-street, W.
4408	" 20.	Watch Cap and Fastener	T. G. Forneaux	Coventry.
4409	" 25.	A Copying-press Water Well	Goodhall and Dimsdale	9, Pancras-lane, City, E.C.